Midwest Steel & Iron Works Co.
25 Larimer Street
Denver
Denver County
Colorado

HAER No. CO-19

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Rocky Mountain Regional Office
Department of the Interior
P.O. Box 25287
Denver, Colorado 80225

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HISTORIC AMERICAN ENGINEERING RECORD
MIDWEST STEEL & IRON WORKS COMPANY

Location:

25 Larimer Street
Denver, Denver County
Colorado

UTM: 13.499680.4398720
Quad: Fort Logan, Colorado

Date of Construction:

Office Building - 1906, 1930, 1955
Shop Complex - 1911, 1923, 1942, 1952, 1965, 1967

Present Owner:

Midwest Steel & Iron Works Company
Post Office Box 5384
Denver, Colorado 80217

Present Use:

Vacant

Significance:

Midwest Steel & Iron Works Company is one of Denver's oldest and largest metal fabricators. Since the late nineteenth century Midwest has produced structural and ornamental components for buildings and engineering structures throughout Colorado, Wyoming and New Mexico.

The four-building Larimer Street complex served as the company's headquarters between 1923 and 1983. The Midwest complex includes an architecturally significant office building designed in 1930 by Denver architect, Roland L. Linder. The Art Deco design of the office is a rare Denver example of the style applied to an industrial site.

Historian:

Kathryn M. Kuranda, Howard Needles Tammen & Bergendoff, for the Colorado Department of Highways
March, 1984.

Introduction:

Midwest Steel & Iron Works Company is significant for its associations with the industrial development of the city of Denver. Since the 1890's the company has been one of the region's foremost fabricators of structural and ornamental metals. Midwest's Larimer Street complex served as the company's headquarters between 1923 and 1983. In addition to the site's historical significance, the complex office building is noteworthy as an unusual Denver example of the Art Deco style adapted to an industrial site. The significance of the Midwest Steel & Iron Works Comapny complex was recognized in June, 1983, when the site was determined eligible for inclusion in the National Register of Historic Places under Criteria A and C.

Documentation of the industrial complex for the Historic American Engineering Record was necessitated by the proposed construction of Project 040 - 4(6); Colfax Viaduct, Final Phase. This project will replace the structurally deficient Larimer leg of Denver's Colfax-Lawrence-Larimer Viaduct with a three-lane, westbound viaduct in the Walnut-Wazee Street corridor. Project termini are projected as the eastern touchdown at 8th Street, the connection to the new Colfax Viaduct and the southbound Interstate 25 (I-25) ramp touchdown. Construction of the proposed Walnut Viaduct and future ramps

connecting the viaduct and I-25 will directly affect the Midwest complex. One or more of the four complex buildings will be demolished during the proposed undertaking.

The Federal Highway Administration is the lead agency in charge of the proposed action while the Colorado Department of Highways is the state agency responsible for the preparation of environmental studies and project engineering. Howard Needles Tammen & Bergendoff is the engineering firm responsible for project design and the preparation of recordation materials.

In compliance with Section 800.4 of the Advisory Council on Historic Preservation Regulations, the effects of the proposed Walnut Viaduct on the Midwest Steel & Iron Works complex were evaluated. It was determined that construction of the viaduct will adversely affect the Midwest complex. Recordation to Historic American Engineering Record standards was prescribed to mitigate this finding.

Historical Background:

The Midwest Steel & Iron Works Company had its beginnings in 1893 when Paul Richter and James B. Jackson organized a metal fabricating concern specializing in building components.[1] Incorporated as the Jackson-Richter Iron Works in 1905,[2] the company first operated from a site on Champa Street in Denver. Expansion necessitated the company's relocation to larger facilities on 19th and Blake Streets in 1906.[3]

During the first twenty years of operation the Jackson-Richter Iron Works produced a variety of structural and ornamental architectural components. Among the items advertised in the company's early catalogs were cast iron store fronts, art metal ceilings, sidewalk grates, office grills, railings, letter and wire signs, fire escapes, stairs, fire doors, elevator cars and enclosures, and wrought iron and steel vault fronts.[4] The majority of these components were fabricated from standard stock shapes shipped directly from eastern foundries to the Jackson-Richter complex by rail.[5]

In 1910 Albert G. Fish acquired control of the Jackson-Richter Iron Works from James B. Jackson,[6] thus establishing a family association with the company which continues to the present. Albert G. Fish broughtto the Jackson-Richter Iron Works extensive experience in the metal fabricating field.

Prior to migrating to Colorado in 1910, Fish had been associated with two major fabricators in his home-town, St. Louis. Fish began his career with the Koken Iron Works, a subsidiary of the American Bridge Company, where he rose to the position of vice-president and general manager. In 1904 Fish and three former Koken Works employees organized the Banner Iron Works. The Banner Iron Works, under the direction of Fish as president and general manager, was responsible for the fabrication of the structural system of the St. Louis Flat Iron Building, the first building in that city to employ a steel structural frame.[7]

A year after acquiring control of the Jackson-Richter Iron Works, Albert G. Fish was elected president and general manager by the company's Board of Directors.[8] Fish served in this position until his death in 1947. The Jackson-Richter Iron Works continued to prosper under Albert Fish's direction. By January, 1914, the company again moved to larger facilities at 3221 Blake Street,[9] and in 1917 the Board of Directors authorized the purchase of the inventory and equipment of the Brown Iron Works Company.[10]

As the advantages of structural steel systems were recognized and applied to the design of commerical and public buildings, an increased demand for structural steel fabrication and erection was created.[11] The Jackson-Richter

Iron Works capitalized on this demand by specializing in structural steel fabrication and erection. As a result, the fabrication of steel structural systems became the company's primary service.

World War I and the accompanying anti-German national climate prompted Jackson-Richter's Board of Directors to rename the company. In October, 1919, the Iron Works officially adopted Midwest Steel & Iron Works Company as the concern's new trade name.[12]

By 1922 the Midwest Steel & Iron Works Company had outgrown its Blake Street complex. In January, 1923, the Larimer Street site of the Brown Iron Works Company was purchased by Midwest to accommodate the company's increased spatial requirements. The Larimer Street site included ninety-nine feet fronting First Street and extended north towards the Colfax-Larimer Viaduct.[13] Adjoining property was subsequently purchased by Midwest until the company had consolidated a parcel incorporating lots 40 through 43 of Bakers Villa, an area of approximately 5.2 acres.[14]

The former Brown Iron Works site on Larimer Street included an office building constructed in 1906 and a shop built in 1911. Midwest initiated a capital improvements campaign shortly after purchasing the property which included the expansion and refitting of the existing shop complex.

Midwest moved the company's offices and fabricating operation to the Larimer Street complex in the fall of 1923.[15]

In 1926 Midwest's Board of Directors authorized the construction of a Pueblo, Colorado, plant specializing in light steel fabrication. The Pueblo location was selected for its proximity to the Colorado Fuel and Iron Works Company's Pueblo steel mill which had become a major supplier of standard steel shapes for Midwest. Midwest's Pueblo plant was subsequently expanded in 1928 to accommodate a full range of fabricating services.[16]

Major projects undertaken by Midwest in the Denver area during the 1920's included the fabrication and erection of the steel structural systems for the Mountain States Telephone and Telegraph Company Office Building, the Continential Oil Building, East Denver High School, the Cathedral of Colorado Consistory A&A Scottish Rite, the Denver Orpheum Theatre, St. Dominic's Church and the Denver City and County Building. In addition, the company also supplied steel structural components for the Moffat Tunnel, James Peak, Colorado, and the Royal Gorge Suspension Bridge near Canon City.[17]

A major addition to the Larimer Street office building was constructed in 1930. This addition, a two-story, brick structure measuring approximately thirty-five feet by seventy-

two feet, was appended to the east elevation of the existing two story, brick office. This substanial addition serves as the principal entrance and main structural block of the Midwest office. In contrast to the Commercial Vernacular design of the 1906 office, the 1930 addition was designed in the then-popular Art Deco style by Denver architect, Roland L. Linder.[17] The office addition utilized an unusual "battleship deck" structural system. This system, composed of steel plates connected by a light steel structural frame, was first introduced in ship building to increase the lateral strength of ocean-going vessels.[18]

As the number of major building projects declined with the economic depression of the 1930's, Midwest concentrated its efforts on bridge fabrication. During this period the company was among the three most prolific bridge fabricators operating in Colorado.[19] The majority of the bridges fabricated by the company during the decade were seventy-five to eighty-foot Pony and Deck Trusses. Field research conducted in conjunction with the Colorado Department of Highways' Historic Bridge Inventory has uncovered approximately thirty such structures on the Colorado county road system which can be credited to Midwest.[20]

During the Second World War Midwest was awarded construction contracts for a number of regional military

installations. During the war years projects were completed for Fort Francis E. Warren (Wyoming), Fort Logan (Denver), Lowry Air Force Base (Denver), Buckley Field (Denver), and Camp Carson (Colorado Springs). In addition, Midwest was among several Denver steel fabricators engaged in the first dry land ship building project for the United States Navy. Under this project hull sections for aircraft carriers and landing craft tanks were fabricated in Denver and then shipped to the Mare Island Navy Yard in California by flatbed railroad cars. Final assembly of the vessels was completed at the Mare Island installation. In recognition of Midwest's participation in this program, the U.S. Navy awarded the company the Navy "E" for Excellence on January 23, 1944.[21]

In June, 1947, Albert G. Fish died. Midwest's Board of Directors elected Burton W. Melcher company president later that year.[22] Under Melcher's direction a third Midwest plant was established in 1950 on 48th Street in Denver. The 48th Street plant specialized in the fabrication of large steel systems for which the company was becoming increasingly well known.[23]

Although a series of additions were made to the Larimer Street complex between 1952 and 1967, the physical

capabilities of the site imposed restrictions on the range of products manufactured there. The successive additions to the industrial buildings had resulted in an inflexible and inefficient design. As a result, Midwest's fabricating operation was gradually moved to the more adaptable 48th Street site.

In 1957, Burton Melcher resigned his position as president of Midwest Steel. Frederick G. Fish, then serving as vice-president, was elected company president, a position which he holds to the present.[24]

By the early 1980's the Larimer Street complex was confined to the fabrication of the company's smallest projects. The company offices were still housed on the complex. In the fall of 1983, Midwest consolidated its operation at the 48th Street complex to include the operations formerly conducted on Larimer Street. Substantial improvements were made to the 48th Street plant to facilitate this consolidation. These improvements included the construction of a contemporary office building.

Industrial Process:

Steel fabrication is an industrial process integrating engineering and manufacture. The process utilizes standard steel shapes, including I-beams, angles, channels and panels, to fabricate individually designed components which are produced to exacting standards. The fabrication process requires a large capital investment in machinery, buildings and traveling equipment (cranes).

Once the firm has been awarded a contract, the general architectural or engineering designs for the project are sent to the fabricator's engineering department where detailed assembly drawings are prepared. Fabrication drawings show in detail each piece of steel required for the project along with the attachments necessary to tie each piece to the next (clips, angles, brackets, etc.). From these detailed working drawings blueprints are prepared for use in the fabrication shops.

The fabrication shops are by necessity open, undivided structures owing to the varying size and requirements of the projects which pass through them. Heavy cranes secured to tracks at the buildings' eave lines are the one constant in the design of the shops. These cranes are necessary to

transport the steel components through the stages of fabrication.

Based on the working drawings prepared by the engineering department the shop superintendent prepares a "cutting list" which itemizes the shapes to be sheared or sawn. This list is then used to mark the location of holes, copes, etc. on standard steel shapes which have been cut to the appropriate size. Steel pieces are then transported to blocking machines or burning skids where flanges or webs are blocked out or burned off. Clip angles, gusset plates or other connecting pieces are next fitted and bolted to the steel. The assembled steel is painted to the specifications of the client in the final stage of fabrication.

In a modern fabricating plant, such as the Midwest complex on 48th Street in Denver, steel is worked using a variety of computerized machinery and light electrical hand tools. Technological improvements in crane capacities and machinery used to manipulate steel have dramatically increased the size of components fabricated since the adoption of steel as a standard structural material. The basic fabricating process has, however, remained the same.

At Midwest's Larimer Street complex, standard steel shapes were shipped directly from the steel mill to Midwest

via the Denver and Rio Grande Railroad. Major steel suppliers to the Midwest Works have historically included U.S. Steel, Bethlehem Steel and the Colorado Fuel and Iron Works Company. Fabrication drawings were prepared in the company's engineering department which was located in the complex office building. The fabrication process was labor intensive. Shop machinery was belt-driven from line shafts driven by a central engine, and riveting was done by hand from a single rivet forge.

As Midwest expanded over the years the original shop machinery was gradually replaced with more efficient tools for fabrication. Unfortunately, the majority of the company's first machines were discarded in the process. Surviving in the shop complex (Building BB) is an original rivet forge dating circa 1925. Surviving at Midwest's 48th Street complex is a massive steel punch manufactured by the Scully Steel & Iron Company of Chicago (Patent No. 746716, 15 December 1903).[25]

Building Descriptions:

The following descriptions reflect the present condition of the structures found on the Midwest Steel & Iron Works Larimer Street site. Building descriptions are keyed to the complex site plan accompanying this report.

Office Building: 1906, 1930, 1955

The Midwest office building (A) is a two story, brick structure built in three stages between 1906 and 1955. The original, Commerical Vernacular style office (AA) was constructed in 1906. The symmetrical structure is built in English bond brick supported by a brick foundation and terminating in a flat roof. The building's Larimer Street elevation is accented by a corbelled brick cornice which incorporates a simplified dentil design. Star tie plates mark the second story level of the building.

In 1930 a major addition (AB) was erected adjoining the east elevation of the original office. This addition is a two story, brick structure measuring approximately seventy-two feet by thirty-five feet and was designed in the Art Deco style by Denver architect, Roland L. Linder. The structure's design incorporates a hexagonal entry tower, shallow brick pilasters, spandrels with stylized chevrons and a crenelated

roof-line. Elaborate ornamental iron window grills and an ornamental iron griffin originally accented the structure. The griffin, once found over the canopied entrance, was removed in 1983 along with an ornamental iron sign reading "Office, Midwest Steel-Iron Works" which was found on the structure's roof.

The exterior of the building is faced in five-course, common bond brick including randomly spaced glazed headers. Fleur-de-lis tie plates mark the interior floor level of the second story. The addition's multi-light windows have been sheathed in plywood as have the windows of the 1906 building and the 1955 addition. The building's original windows are intact beneath this sheathing.

The structural system of the Art Deco addition employs an unusual "battleship deck" design which was first introduced in ship building to increase the lateral strength of ocean-going vessels. In this system, steel plates are connected by a light steel frame thus creating a continuous interior skin.

In 1955 a second, two story, brick addition (AC) was appended to the west elevation of the Art Deco addition and to the north elevation of the 1906 office thus forming a nearly rectangular building block. The 1955 addition is constructed in cinder block faced in five-course, common bond

brick and rises to a flat roof. The addition forms a rectangular mass measuring twenty-five feet by forty-three feet which lacks distinguishing stylistic features.

Shop Complex: 1911, 1923, 1952, 1967, 1942, 1965

The original shop complex (Building B) is located to the north of the Midwest office and is oriented towards I-25. The core complex was constructed in four major stages between 1911 and 1967. The earliest shop building is a two-story, brick structure built in 1911. The building (BA) is supported by a concrete slab foundation and terminates in a flat roof with a stepped parapet fronting the east elevation. The building includes one-light-over-one-light sash windows enframed by wooden surrounds. The interior of the building is undivided and open to the roof system. One-ton swing cranes are located at intervals along the north and south ends of the structure. The building was last used by Midwest as a storage area for unfabricated steel shapes.

In 1923 a major addition was added to the south of the 1911 building. This addition (BB) is composed of twin brick units supported by a concrete slab foundation and terminating in twin gable roofs incorporating gabled clerestories. The addition includes multi-light, six-sash window units and east elevation loading doors.

The interior of the addition is an undivided space open to the exposed truss roof system. The southernmost addition unit includes the complex's original rivet forge and was used as the complex ornamental shop. The northern unit served as Midwest's rigging room where netting and safety equipment was stored between steel erection projects. The northern unit also includes a five-ton overhead crane secured to an eave level track running the length of the building.

Spanning the north elevation of the 1911 building are two cinder block additions (AC, AD) measuring thirteen feet deep. These additions were constructed in 1952 and 1967 and were used as a wholesale office for light steel sales.

Adjoining the shop building to the west is an open crane runway (C) measuring sixty-one feet by five-hundred-and-twenty-two feet. This structure is open on the north elevation and is composed of steel I-beam framing sheathed in corrugated metal. The building is supported by a concrete slab foundation and terminates in a shallow gable roof. A massive ten-ton crane is supported by a track running the length of the building. This track is located at the clerestory level of the building. The crane runway was erected in 1942.

Located to the west of the 1942 crane runway is a second

crane runway (D) constructed in 1965. The 1965 runway measures forty feet by one-hundred-and-twenty-seven feet and is perpendicular to the larger structure. The design and construction of the smaller runway is identical to that of the 1942 building.

Also included on the Midwest site is a one-story, cinder block office building (E) which was constructed c.1955. This building is not historically related to the Midwest operation and is considered a non-contributing element.

Chain of Title

Original and subsequent owners: References to the chain of title to the land upon which the structures stand are in the Office of the Recorder of Deeds, Denver City & County Building, Denver, Colorado.

1923 Warranty Deed. 21 December 1923. Deed Book 2989, Page 125. Home Savings & Trust Company to Midwest Steel & Iron Works Company.

1914 Warranty Deed. 7 May 1914. Deed Book 2410, Page 292 The City and County of Denver to the Home Savings & Loan Company.

1889 Warranty Deed. 15 June 1889. Deed Book 497, Page 408. Henry Kiel to the Denver City Cable Railroad Company.

1889 Warranty Deed. 6 June 1889. Deed Book 500, Page 408. Charles J. Wolf to Henry Kiel.

1885 Warranty Deed. 7 May 1885. Deed Book 234, Page 126. Nathan A. Baker to Charles J. Wolf.

1884 Estate Agreement. 10 September 1884. Deed Book 232, Page 430. Charlotte Baker, Nathan A. Baker, Helen C. Baker.

1874 Plat. 30 March 1874. Book 1, Plate 26. Addison Baker.

Grantor-Grantee Books were searched for references to the Midwest site for the period 1889-1914 without success. It is known from the Board of Directors' minutes for Midwest Steel that the Brown Iron Works operated from the Larimer Street site c.1890. Colorado law does not require that instruments of title transfer be recorded. It is therefore possible that the instrument recording the property ownership of the period is not included in the Denver records.

Endnotes:

1 "Midwest Steel & Iron Works Company Achieves Wide Reputation Through the Rocky Mountain Region", Colorado Manufacturer and Consumer, (Denver,1928), p.13.

2 Bert Fish, "The History of The Midwest Steel & Iron Works Company, 1894-1969", unpub., p.1.

3 Fish, p.1.

4 Jackson-Richter Iron Works Company, General Catalog No. 70, (undated, c.1915).

5 "Midwest Steel & Iron Works Company Achieves Wide Reputation Through the Rocky Mountain Region", p.13.

6 Fish, p.2.

7 Fish, p.2.

8 Herman J. Lumpp, Minutes of a Directors Meeting of the Jackson-Richter Iron Works, 3 November 1909; quoted in Fish, p. 2.

9 Fish, p.3.

10 Fish, p.4.

[11] William Le Baron Jenney was responsible for the first use of steel beams in a commercial structure (Home Insurance Building, Chicago, 1884-1885). Cast iron columns and wrought iron beams and joists were employed prior to 1884, although steel structural members had been used by bridge engineers since c.1870.

[12] Fish, p.4.

[13] Ira C. Bower, Minutes of the Directors Meeting of the Midwest Steel & Iron Works Company, 2 July 1923, p.1; quoted in Fish, p.4.

[14] See Chain of Title.

[15] Fish, p.4.

[16] Fish, pp.4-5.

[17] Midwest Steel & Iron Works Company, General Catalog, (1932) no pagination.

[18] Roland L. Linder was licensed to practice architecture in Colorado in 1921. Among the projects Linder completed during his career were the designs for the Denver Coliseum, Rose Medical Center, Mercy Hospital and St. Luke's Hospital.

19 The three most prolific bridge fabricators working in Colorado during the 1930's were Midwest, Minneapolis Moline, and the Minneapolis Steel & Manufacturing Company.

20 Field work for the Colorado Historic Bridge Inventory was conducted 6/83 to 12/83.

21 Fish, pp.7-8.

22 Fish, p.9.

23 Fish, p.9.

24 Fish, p.10.

25 Bert Fish, Interiew, 23 February 1984. W.P.A. Writers Project, Interiew: Harry L. Walsh, Design Engineer E. Burkhardt & Sons Steel & Iron Works Company, 19 March 1941 (Unpub.).

Bibliography:

Cervi's Journal. 22 November 1950, p.1.

Colorado Department of Highways. Preliminary Case Report Project FCU 040-4(6), Colfax Viaduct, Final Phase. January, 1984.

Denver Assessor's Office. Commercial-Industrial Appraisal.

Denver Commercial. Vol. 17, 30 April 1925, p.18.

Denver Public Library Western History Department. Clipping File: Denver, City and County Administration, City and County Building.

Fish, Bert. "The History of The Midwest Steel & Iron Works Company, 1894-1969". unpub.

_____. Interview, 23 February 1984.

Fish, Frederick G, President, Midwest Steel & Iron Works Company. Interview, 23 February 1984.

Hafen, LeRoy R. Colorado and Its People: A Narrative and Topical History of the Centenial State. New York: Lewis Publishing Company, 1948. Vol. 1, p. 618. Vol. 2, pp. 598-600.

Jackson-Richter Iron Works Company. Iron Works for Buildings. General Catalog No. 70. Undated, circa 1915.

"Midwest Steel & Iron Works Company Achieves Wide Reputation Through the Rocky Mountain Region". Colorado Manufacturer and Consumer. 1928 p.13.

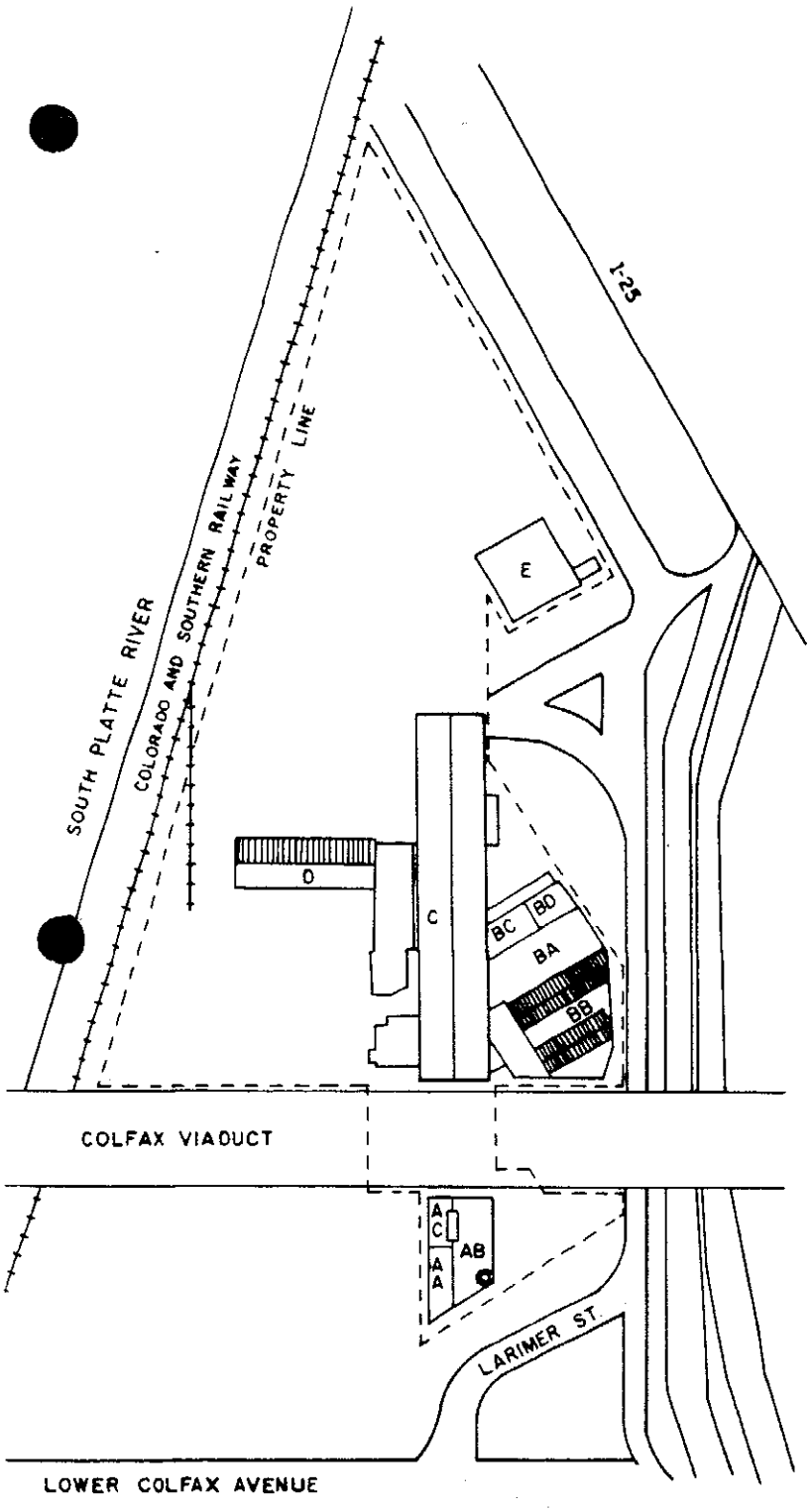
Midwest Steel & Iron Works Company. General Catalog. 1932.

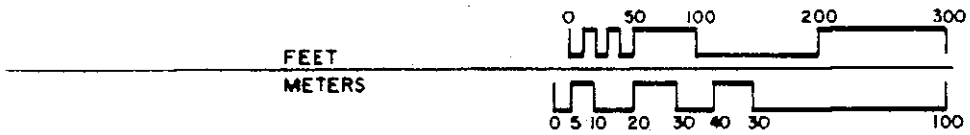
Noel, Thomas J. Denver's Larimer Street: Main Street, Skid Row and Urban Renaissance. Denver: Historic Denver, Inc., 1981.

Rocky Mountain News. 2 August 1931, Sec.1, p. 4.

Rocky Mountain News. 12 November 1977, p.22.

W.P.A. Writers Project. Interview: Harry L. Walsh, Design Engineer E. Burkhardt & Sons Steel & Iron Works Company. 19 March 1941 Unpub.





BUILDING KEY:

BUILDING A-OFFICE
- AA (1906)
- AB (1931)
- AC (1955)

BUILDING B-SHOP
- BA (1911)
- BB (1923)
- BC (1967)
- BD (1952)

CRANE RUNWAYS
- C (1942)
- D (1965)

BUILDING E-NON-CONTRIBUTING OFFICE BUILDING
CIRCA (1955)